ABOUT PROBLEMS OF SPECIALISTS TRAINING ON INFORMATICS IN

HIGHER EDUCATION INSTITUTIONS OF KAZAKHSTAN

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ABSTRACT

There are problems in training of specialists on informatics in higher education institutions of Kazakhstan are considered in this paper.

KEYWORDS: Information, Inter Subject, Fundamental Knowledge, Education System

INTRODUCTION

Introduction and development of the latest information technologies led to serious changes in education, business, industrial production, scientific researches and social life. Informatization turned into a global inexhaustible resource of the mankind which entered a new century of development of a civilization which permissibly to call information.

In the course of society informatization spheres of its activity considerably change, the considerable part of society is anyway involved in the sphere of information services, and every second becomes the consumer practically. Over the last 50 years in the sphere of informatization there were 3 scientific and technical revolutions: the first - emergence of "big" COMPUTERS; the second - creation of microcomputers (personal computer) and, at last, the third - formation of worldwide network Internet.

In this regard the phenomenon, special value allocated for education, urged to give knowledge and skills in processing of the most important product - information. Under the influence of new information technologies modern technologies of education on the basis of immersion of the person in the new intellectual environment created.

Independence acquisition by the Republic of Kazakhstan demands formation of new policy in education considering tendencies and specifics of the present stage of social development in Kazakhstan, achievements of pedagogical science, and also real operating conditions of a developing national education system. Now, as well as the majority of the countries, Kazakhstan is on a threshold of gradual transition from industrial development to information stage. Active introduction of computers has connected with it in all areas of human activity, radical changes in production structure that demands continuous updating of knowledge and the abilities necessary for development of new technologies. In this situation of prospect of further development of the country closely connected with an effective solution of the problem of the organization of system of the continuing education providing to each member of society opportunity to raise and change the qualification as required, guaranteeing adequate training of the person for life in information society. In this process preparation in the field of informatics which urged to provide successful development of new information

technologies in various of a national economy has a special role.

Broad training of specialists in the field of informatics, information technologies began in higher education institutions of Kazakhstan after the known Resolution (1985) on "Ensuring computer literacy of youth", directed on introduction in the higher and high school of a course of fundamentals of informatics. Within a problem of ensuring computer literacy in Kazakhstan considerable work on methodical ensuring teaching of informatics at school, training of teachers of the combined specialties of various specialization was carried out. However now in system of training of specialists in the field of informatics in higher education institution still there are many shortcomings, the content of such preparation in many respects doesn't satisfy constantly growing inquiries of society, production in this sphere.

Significantly didn't change only requirements, but also and conditions of implementation of preparation on informatics in higher education institutions of Kazakhstan. In particular, in many higher education institutions preparation on the profiles combined with informatics ("informatics and economy", "informatics and linguistics", etc.) entered which causing by deep penetration of methods, meanings, a conceptual framework of informatics into the corresponding areas of knowledge. It is obvious that such combination of profiles of preparation demands considerable differentiation of the content of training in informatics in higher education institutions, more effective implementation of intersubject communications, integration of training in informatics with relating subjects. At the same time, the real content of preparation on informatics in the majority of higher education institutions of Kazakhstan in essence invariant also is connected generally with development of a traditional set the meanings of information technologies. At universities of Kazakhstan fundamental bases of a subject matter of the information scientist practically aren't taught. As a result of it the course of informatics accepts pronounced technological and applied orientation. It is possible to tell that in higher education institutions fundamentals of informatics, and generally means of informatization didn't study.

At the same time it is clear that deepening of a technological orientation can't be boundless as, eventually, it will inevitably encounter the natural restrictions generated by absence or insufficiency of fundamental base. Long ago it is known that fundamental knowledge for this reason training in higher education institution has to most slowly grow old provided according to the programs which contents constructed on the basis of such knowledge. The appliy party of training of the expert in informatics has to rely on his fundamental theoretical and technological preparation. The sharp need for shots of various professional level and the specialization, seized fundamentals of informatics and information technologies, results now in need of their preparation not only for educational institutions, but also directly on production. There are all bases to believe that this tendency caused by continuous growth of information component in professional activity practically of any person, in the next years will amplify. It is obvious that the problem of retraining of personnel in the field of informatics and information technologies will assign to experts having systematic preparation in this area, received in higher education institution.

However many of them (except for graduates of teacher training Universities) have not pedagogical and methodical preparation, and will carry out (and already give) classes by the didactic principle only known for them - "do as I". It causes need of a combination for preparation higher education institutions in the field of informatics with methodical training of students, introductions of the corresponding combined specialties. In it one of features of training of specialists of this profile now which needs to be considered at improvement of the content of their preparation in higher education institution is shown. Among other features, we will emphasize as one of the major now a task of the solution of a number of the questions connected with needing of transition to training of specialists on informatics in the Kazakh language.

It has defined by two major factors. First, with acceptance in Kazakhstan "The law on a state language" which on the one hand, fixes the Kazakh-Russian bilingualism in the country, and on the other hand emphasizes need of more and more widespread introduction of the Kazakh language in an education system. In - the second, mass retraining of personnel in the field of informatics and information technologies means that wide layers of able-bodied population will be involved in it, including and that its considerable part which knows only the Kazakh language. Transition in higher education institutions to training in informatics in the Kazakh language will demand the solution of a number of terminological questions by preparation of educational and methodical grants, development and use of software. Thus, there is the whole complex unresolved while in the theory and practice of high school education in the field of informatics of questions which define relevance of this research. The analysis of a condition of training of future experts - graduates of universities in the field of informatics in Kazakhstan allows us to allocate now four main directions of improvement and development of such preparation:

- Fundamentalization of the content of training in informatics at university, i.e. transition from applied aspects and technology to scientific fundamentals of informatics;

- Preparation development at university of experts of the combined profiles on the basis of integration of informatics with related subjects;

- Inclusion of methodical preparation in system of training of students on the specialties connected with informatics and information technologies;

- Gradual transition to provided by the law on language of possibility of training of students in the field of informatics in the Kazakh language.

At the same time, the literature analysis on problems of training of students of universities in the field of informatics shows that allocated above the direction didn't receive sufficient reflection in the conducted researches and practice of training. So, preparation in the field of informatics is considered in the majority of researches as preparation for application of information technologies. It is necessary to notice that in a number of universities of Kazakhstan training of specialists on adjacent profiles, for example such as "informatics - economy", "informatics - a foreign language" and others is already conducted. However many theoretical issues of specialization of methodical system of training in informatics in this situation aren't resolved, and developed methodical recommendations concern only implementation of intersubject communications and use when studying related subjects of information technologies.

Practically the question of differente levels training of students in the field of a technique of teaching of informatics (not only for future teachers, but also experts of other profiles who can become teachers of this subject on courses of retraining of personnel) was never raised. The program of the minimum methodical training of specialists in informatics wasn't considered earlier in any researches. At last, transition questions to training in informatics in higher education institutions in the Kazakh language both following from here terminological and other problems also practically weren't considered. It is possible to note only S. Kariyev's devoted to terminology of informatics in the Kazakh language the work, however it concerns only school, instead of a high school course on this discipline. Thus, any of four, allocated above the directions of development of training of students in the field of informatics and information technologies at universities of Kazakhstan (on the specialties combined with informatics), didn't receive sufficient reflection in the researches conducted earlier. It is possible to draw a conclusion on contradiction existence between the system which has

developed so far in Kazakhstan of preparation on informatics of experts combined with informatics of profiles and the social order for training of such experts in the conditions of transition to information society and the new market relations which were formed now. Told defines the scientific problem making the content of the real research above.

As object of research the methodical system of training in informatics at universities of the Republic of Kazakhstan in the conditions of training of specialists of the profiles combined with informatics acts.

The research objective consists in theoretical development of the directions of improvement of methodical system of training of students of university of the specialties combined with informatics in modern conditions of the Republic of Kazakhstan. Object of research - ways of improvement and specialization of methodical system of training in informatics at universities of the Republic of Kazakhstan at training of specialists combined with informatics of profiles.

The hypothesis of research is that efficiency of preparation on informatics of experts combined with informatics of profiles in Kazakhstan significantly will increase if the methodical system of their preparation assuming that created and introduced:

- In the content of training in informatics will allocate invariant and variable speaking rapidly; within invariant part it will be significantly strengthened fundamental a component of the maintenance of a course, and variable it will be constructed taking into account the principle of a professional orientation;

- At training of specialists of the profiles combined with informatics integration of the content of training in informatics with the content of training of related subjects will strengthen;

- In the content of training of specialists at university the methodical preparation necessary for realization of a problem of retraining of personnel in the field of informatics and information technologies will include;

- In the maintenance of training courses on informatics will receive reflection terminological features the information scientists developing in the Kazakh language, and also features of the language environment and mentality of the Kazakh people will conside.

According to the purpose and a hypothesis the following research problems defined:

- To prove the main directions of a fundamentalization of training of students on informatics and differentiation of its contents depending on education specialization;

- To define the most expedient profiles for the training combined with informatics;

- To select the content of training in informatics on each of the chosen profiles;

- To develop methodical and program support of the selecting content of training;

- To select the minimum set of concepts of the informatics, necessary for training of students in this discipline in the Kazakh language and to solve the corresponding terminological problems arising from features of the Kazakh language;

- To develop the content of the minimum methodical training of future experts.

The maintenance of the put problem defined the theorist experimental nature of research. It is obvious that experimental check of the developed methodical system in practice of work of universities as a whole is possible only at

creation of appropriate programs and textbooks on informatics for future experts in informatics. Nevertheless, for check of reliability of the main results of research, besides their theoretical justification, in the thesis an attempt of practical realization of separate elements of the constructed methodical system at universities of the Republic of Kazakhstan .

In the Table 1 we show 10 Universities on Computer Science and Information Systems.

Table 1: QS World University Rankings by Subject 2013-Computer Science & Information Systems

QS Rank	School Name	Country	Overall
1	Massachusetts Institute of Technology	United States	96.70
2	Stanford University	United States	92.10
3	University United of Oxford Kingdom	United States	92.00
4	Carnegie Mellon University	United States	90.50
5	University of Cambridge	United Kingdom	89.80
6	Harvard University	United States	88.40
7	University of California Berkeley (UCB)	United States	88.00
8	National University of Singapore (NUS)	Singapore	87.20
9	ETH Zurich (Swiss Federal Institute of Technology)	Switzerland	87.10
10	University of Hong Kong	Hong Kong	84.10

For the solution of problems of research we used the following methods:

- The analysis of scientific literature on philosophical, social, psychology and pedagogical and ethno - to the pedagogical problems connected with informatization of society, its influence on the personality and an education system; the analysis of scientific literature on informatics, computer facilities, a technique of teaching of informatics at school and higher education institution; analysis of school and high school programs, textbooks and manuals; studying and synthesis of domestic and foreign experience of informatization of education and, in particular, problems of training of the teacher of informatics;

- Theoretical research of a problem on the basis of methodology of system approach and use thus the didactic is information - developing models;

In article new concepts of creation of methodical system of training of specialists of the profile combined with informatics at universities of the Republic of Kazakhstan are investigated. On the basis of this concept the methodical system of training of specialists on informatics is constructed.

The theoretical importance consists in justification:

- Expediency and efficiency of training of specialists of the profiles combined with informatics;

- In development of systems of courses, for ensuring the training of specialists, the profiles combined with informatics;

- Development and improvement of courses of the informatics, allowing to carry out preparation on the combined specialties on the basis of universities is necessary;

- Further development world outlook components of a course of informatics is necessary. The most interesting and actual for the Republic of Kazakhstan created of the integrated courses of informatics and subjects national - regional orientation;

- Improvement of the maintenance of a high school course of informatics taking into account its orientation towards development of a fun-damentalization of its contents was necessary;

- Development of the content of education had accompanied by improvement of a technological component of this course. Especially it is actual for students having training on adjacent specialties;

- Development of researches on improvement of national Kazakh terminology in the field of informatics and information technologies was necessary;

- On the basis of the theory of methodical systems the basis of methodical system of training of specialists on informatics of the combined profile in higher education institutions of the Republic of Kazakhstan is constructed;

- The purposes of training of experts in informatics of the combined profile on a basis professional, basic preparation representing association on informatics at the level of a bachelor degree, a magistracy with addition of profile preparation formulated;

- The content of training has to is under construction so that to consider specifics of future work of the expert consisting in need of versatile activity, possession of terminology in several languages, the accounting of national traditions;

- At the heart of the content of training the principle of four paradigms of the programming, allowing corresponding pluralism of thinking of the expert in informatics has to lie;

We entered the XXI century in which the one who possesses information, owns the world. It any more phrase, and reality. In modern, conditions of dynamic development of professional and technological training of the expert of informatics provides efficiency and improvement of process of preparation in compliance to development of the technologies applied in society. society.

CONCLUSIONS

There are problems in training of specialists on informatics in higher education institutions were considered in this paper.

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